to have accumulated in heaps, and the recent formations of the Red Sea are very often little else than vast clumps or mounds of sand, sea-weed, and the finer particles of young shell-fish; at other times it is evidently a sedimentary matter periodically deposited on the continuous ocean deposit, differing in nature from the latter by containing more or less animal and vegetable matters of the earth. This material is as likely to intersect clay-slate and limestone as the two latter are to intersect granite; and its peculiar disposition at Glen Tilt is a much greater proof that it was in a soft and permeating aqueous state, than that it was a burning liquified mass, which could not by any possibility have produced the like phenomenon, nor is there any analogy to it in the existing lavas of the day.

It is true, as the writer observes, that geologists, changing their opinions continually, and following instead of leading in the path of discovery, have been compelled to acknowledge different epochs of granitic formation; but a very slight acquaintance with the most recent publications of the day must shew him that the basis of all their theories rests upon the notion of granite being a primary product, and constituting the lower or inner portion of the globe, surrounding the inclosed fire; of this, Mr. Lyall, in the last edition of the "Elements of Geology," gives his supposed section of the earth; and Mr. Phillips, in his Treatise on Mineralogy, assumes for granted that the crystalline rocks are products of fusion and primary formations. Dr Buckland, Professors Brand, Thomson, Farraday, Sir W. Herschell, and other eminent men, implicitly follow the same volcanic theory, and unfortunately as unwisely make it the basis of their respective systems.

MONUMENT IN ST. STEPHEN'S CHURCH, BRISTOL.

This monument is a very pretty subject for antiquarian discussion. It is older by a century than the church;—it has been built into the wall probably after the erection of the church, and it is composed of parts that do not appear to have been originally conjoined.

Costume is not always an infallible guide in determining the period of the erection of an ancient monument, as it was not uncommon for persons to be represented in the dress they wore, though the fashion of that dress had passed away at the time the monument was erected. It is possible, therefore, that the effigies now lying side by side were originally so placed; though several reasons would lead to the conclusion that the male figure formed no part of the original monument; there may be a difference of fifty years in the date of their costume, as well as in that of different portions of the architectural work.

From the manner in which this monument is built up,—the figures being on separate slabs, and the table-face of the tomb being without sides or back, and disjoined from the jamb-mouldings of the arch under which it is placed,—it is certain that we do not see the parts in their original connection.

The male effigy is one of the few specimens of a figure not attired in armour. Such cumbent effigies have been hitherto considered as belonging only to royal personages, with the exception of ecclesiastics, who have their proper costume: but as this figure appears to be of about the year 1400, it may represent some wealthy burgess of Bristol. Wealthy he must have been, as sumptuary laws in Edward III.'s reign imposed restrictions upon such luxuries as armour and monumental effigies.

The female figure is habited in the costume of Edward III.'s reign, about the year 1350. The architecture of the monument has the usual outline of that period—broad and low. It consists of a flat ogee arch, tri-cusped in the middle, with two smaller hanging cusps on each side—the moulding a simple fillet and hollow with square flowers at intervals. It had a crocketted ogee canopy, and a low-crowned buttress on each side, probably similar to the Berkeley monuments in our cathedral. The base is either cut away or sunk under the surface, yet unopened, which is about 18 inches beneath the floor of the church. There seems no reason to think that the floor of the present

Under this monumental arch is no tomb, but only the face of an altar tomb. This face is separated by square buttresses into six very shallow compartments, which contain mourning figures about 18 inches high—two are male, three female, in ordinary dress, the sixth is much mutilated, but may represent a knight by the conical head-dress. The square buttresses terminate in plain shields, and at the junction of these spring trefoiled ogee arches with crockets and finials, forming canopies to the figures.

We have described the arch and the altar tomb as far as their imperfect state will permit, and have only to add that they have been charged with colour as well as the figures recumbent on the tomb.

As the effigies of two sons of Edward III., one in York Cathedral, the other in Westminster Abbey, are the only published specimens of figures of the 14th century not in armour, this male effigy deserves inquiry as to the personage it may represent. For the present we can only describe the figures. They are, as was the custom in the middle ages, in the attitude of prayer; the hands have been placed together palm to palm, but those of the male figure have been broken off above the wrists. The female effigy, which is on the inside, is partly built into the masonry of the wall, under a rough arch of later date than the front arch of the monument. This is the longer figure, and appears to be that for which the monument was erected.

The head of the male effigy is uncovered—the hair is parted in the middle and falls down in a single curl over the ears—the face is not that of a young man, though without whiskers, and having the moustache and beard but slightly marked. The dress consists of a doublet, buttoned down in front, fitting close to the body and reaching to the middle of the thighs; round about the hips is an ornamented bawdrick, from which a dagger has been suspended on the right side. This doublet has a small cape over the shoulder, and leaves the neck to be covered by a loose collar; the sleeves reach below the elbow, and beneath them appears a covering for the lower arm, towards the wrist closely buttoned. The legs wear close-fitting hose, and the feet have pointed sandals of similar material. This costume belongs to the latter end of the 14th century. The feet rest upon a lion, and the head upon a diamond-shaped cushion with tassels.

The head of the female effigy rests upon a square tasselled cushion, and the feet, which are scarcely visible, against a dog.

The head-dress consists of a netted drapery, of square form, beneath which appears the hair, braided each side the cheek. The hood, or veil, falls from the back of the head, and a wimple of linen encloses the chin and covers the whole of the neck and shoulders, except some strips in front of the neck. The body is habited in a surcote; the sleeves are tight and close, up to the wrist; the hands are without gloves or ornaments. The surcote, as far as the hips, fits closely to the shape, but below enlarges into numerous folds; the dress is not buttoned or laced in front, but two buckles of large size are placed low down the waist in front. The mantle, or cloak, is short, and stretches round the back and shoulders, being fastened by a cordon across the breast. This costume properly belongs to the date, 1350, whereas the costume of the male figure appears to be later. The different sizes of the figures and other things above mentioned leave little doubt in the mind of the writer that the monument is compiled of two separate ones, which have been put together in their present situation since the time of Henry VIII.—*Great Western Advertiser.*

A circular is in private circulation, entitled a "Proposed Equitable Tax on the Transfer of Real Property in place of the Income-Tax." The writer estimates the entire property of England at 6,186,000,000*l.*, and proposes that all real property should be taxed with the probate and legacy duty. The produce of such duty would, he thinks, be about 12,000,000*l.* annually. Were his idea adopted, he says that Sir Robert Peel might dispense with the [illegible] rev nue than he has at present.

RAILWAY INTELLIGENCE.

Atmospheric Railways.—Mr. Stephenson, the celebrated engineer, was appointed by the provisional directors of the Chester and Holyhead Railway, to examine into the atmospheric system, and report on its applicability to their project. Mr. Stephenson has made his report, and it is unfavourable. The following is a summary of the conclusion Mr. Stephenson has come to:—

"1st. That the atmospheric system is not an economical mode of transmitting power, and inferior in this respect both to locomotive engines and stationary engines with ropes. 2nd. That it is not calculated practically to acquire and maintain higher velocities than are comprised in the present working of locomotive engines. 3rd. That it would not, in the majority of instances, produce economy in the original construction of railways, and in many would most materially augment their cost. 4th. That on some short railways, where the traffic is large, admitting of trains of moderate weight, but requiring high velocities and frequent departures, and where the face of the country is such as to preclude the use of gradients suitable for locomotive engines, the atmospheric system would prove the most eligible. 5th. That on short lines of railway, say four or five miles in length, in the vicinity of large towns, where frequent and rapid communication is required between the termini alone, the atmospheric system might be advantageously applied. 6th. That on short lines, such as Blackwall Railway, where the traffic is chiefly derived from intermediate points, requiring frequent stoppages between the termini, the atmospheric system is inapplicable; being much inferior to the plan of disconnecting the carriages from a rope, for the accommodation of the intermediate traffic. 7th. That on long lines of railway, the requisites of a large traffic cannot be attained by so flexible a system as the atmospheric, in which the efficient operation of the whole depends so completely upon the perfect performance of each individual section of the machinery."

We subjoin a very brief summary of Mr. Brunel's evidence before that committee, in favour of the atmospheric system:—

"Mr. I. K. Brunel was then examined on the part of the promoters of the Croydon and Epsom line. He had been consulted by the promoters of this line, on the expediency of laying down the atmospheric principle on the Croydon line. He had witnessed the experiments upon this principle which had been made at Wormwood-scrubs. He made a portion of those experiments himself. He thought this line was peculiarly adapted for the atmospheric principle. He thought the atmospheric principle would enable them to run trains more frequently and with greater rapidity. He also thought that the expense of working would be less than on the ordinary railway, particularly in certain cases—such as that of a steep gradient. Considering the gradients which prevailed on the Croydon line, he should say that the atmospheric principle would be far less expensive than the ordinary locomotive principle. That was assuming that a great number of trains would be worked in a day. He could not fix a maximum speed by the atmospheric principle; but he would say that a speed of sixty miles an hour could easily be accomplished. He had himself reached that speed with a locomotive engine."

Railway to Rugby.—It is intended to bring forward in the next session of Parliament the project of a line in continuation of the Great Western Railway, passing through Banbury to Rugby, which for a distance of about thirty miles from Oxford will be identical with the line now suggested; and it is thereupon proposed that if such a project be brought forward and should succeed, the line from Wolverhampton shall merge into that line about eight miles north-west of the town of Banbury. The rough estimated cost of the work from Wolverhampton to this latter point, including the branches to Stoke Works and the river Severn, is 1,000,000*l.*, and the rough estimated cost of the work from the point of junction to Oxford is 500,000*l.*

Arrangements have been effected by the London and Birmingham Railway Company with the Grand Junction Company for the purchase of their line from Bay to Birmingham.